Release Notes for IWFM Version 2015.0.606

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This version of IWFM includes the following modifications and corrections:

1. **(09/20/2016)** A new stream routing component version (version 4.2) is developed to associate multiple groundwater nodes with a single stream node for applications where the computational grid is fine compared to stream channel widths with more than one groundwater node located along the cross section of the channel.
2. **(09/21/2016)** It is now allowed to specify a negative ponding depth for the ponded crops to allow the calculation of water demand to pre-wet the soil.
3. **(12/14/2016)** Groundwater Z-Budget output is now an HDF5 file instead of a Fortran binary file. Methods to aggregate Z-Budget data in time are developed and a tool to import Z-Budget data into Excel is developed.
4. **(01/13/2017)** Root zone component version 4.01 is developed. This version is the same as version 4.0 except that it allows the creation of land and water use as well as root zone Z-Budget outputs.
5. **(02/12/2017)** Root zone component version 4.11 is developed. This version is the same as version 4.1 except that it allows the creation of land and water use as well as root zone Z-Budget outputs.
6. **(02/17/2017)** A mass balance error that sometimes occurred in the root zone budget when land use areas changed is corrected.
7. **(02/22/2017)** A new lake component version (version 5.0) is developed which allows lake outflow to be specified as a lake-elevation-versus-outflow type rating table.

8. **(02/23/2017)** Several errors with the restart file that caused the Simulation to crash in certain cases are fixed.
9. **(03/29/2017)** Z-Budget main input file is modified. It is now very similar to the Budget main input file where multiple Z-Budget HDF5 files can be paired with zone definition files to process the Z-Budget output for zones. Zones are now required to have names also.
10. **(04/07/2017)** The release (i.e. optimized) version of Simulation was sometimes calculating incorrect unsaturated zone layer thicknesses. This was corrected.
11. **(04/13/2017)** A mass balance error was showing in the groundwater budget and Z-Budget outputs when pumping adjustment was on and some nodes were drying. This error is corrected.
12. **(04/27/2017)** Z-Budget output for the unsaturated zone component is implemented.
13. **(04/28/2017)** To be consistent with the SGMA-related documentations, some of the IWFM terminology is updated; *deep percolation* is changed to *percolation*, *net deep percolation* to *deep percolation*, *diversions* in the land and water use budget *to deliveries*.
14. **(05/18/2017)** The code is modified so that the user does not have to enter very a small convergence criteria for the unsaturated zone component to show a very small mass balance error.
15. **(05/31/2017)** There was an error when water supply was delivered to an element group with no water demand at some timesteps creating inconsistent values between different budget tables. This error is corrected.
16. **(06/02/2017)** Root zone component version 5.0 is developed. This version simulates water demand and supply at subregion level for an average agricultural crop (similar to IWFM v3.02).

17. **(06/12/2017)** When water supply (surface water deliveries and pumping) are delivered to an element group, it is no longer required that the elements within the group all belong to a single subregion.
18. **(06/15/2017)** In certain cases, when pumping from dry nodes were adjusted, a positive pumping was incorrectly calculated making IWFM think that this was a recharge instead of pumping. This is corrected.